

University Institute of Engineering and Technology, CSJMU Kanpur

B.Tech Project

Report

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GROUP-1

**B.Tech Project Report**

*on*

**“Sign Language Recognition Using Machine Learning”**

*Submitted in the fulfilment of the requirement for the award of the degree of*

**Bachelor of Technology**

*in*

**Computer Science & Engineering**

*By*

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*Under the Supervision of*

**Er. Suruchi Singh**



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CERTIFICATE

*We hereby certify that the work which is being presented in the B.Tech Project Report entitled* **''****SIGN LANGUAGE RECOGNIGATION USING MACHINE LEARNING"** *, in partial fulfillment of the requirements for the award of the* **Bachelor of Technology in Computer Science and Engineering** *and submitted to the Department of Computer Science and Engineering of University Institute of Engineering and Technology ,Kanpur , UP is an authentic record of my own work carried out during a period from July 2016 to December 2016 under the supervision of* **Er. Suruchi Sigh (Assistant Professor, Department Computer Science & Engineering,**

**UIET Kanpur).**

*The matter presented in this thesis has not been submitted by me for the*

*award of any other degree elsewhere.*

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*This is certify that the above statement made by the candidate is correct to the best of my knowledge.*

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**DECLARATION**

*We declare that this project report titled* “**SIGN LANGUAGE RECOGNITATION USING MACHINE LEARNING”** *submitted in partial fulfillment of the degree of* “**B. Tech in Computer Science and Engineering and Technology”** *is a record of original work carried out by us under the supervision of* **Er. Suruchi Singh** *and has not formed the basis for the award of any other degree or diploma, I this or any other Institute or University. In keeping with the ethical practice in reporting scientific information due acknowledgments have been made wherever the findings of other have been cited.*

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*Above all no words can express our feelings to our friends all those persons who supported us during our project. We also thankful to all the respondents whose cooperation & support has helped me a lot in collecting necessary information*

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ABSTRACT

Sign language, as a different form of the communication language, is important to large groups of people in society. There are different signs in each sign language with variability in hand shape, motion profile, and position of the hand, face, and body parts contributing to each sign. So, visual sign language recognition is a complex research area in computer vision. In today's era computer and human interaction technology are developing day by day. One of them is sign language recognition system in which we convert gesture into text of known language.

Our aim is to solve this problem by developing a web application using computer vision and machine learning algorithm which takes input as images through webcam and hence, predicts the correct alphabet up to maximum accuracy. Sign recognition is very innovative and user-friendly technology to interact with computer machine. Sign language mostly used to communicate with dumb and deaf and also used in some artificial intelligence loaded machines. Our project is mainly focusing on hand gesture recognition system in which we develop a real time gesture interpretation web-based application.

The method used in our project is totally based on hand gesture its does not depend on physical appearance. first, we will capture the hand gesture from web cam and then we will convert it into readable text according to American sign language by using CNN (convolutional neural network and some useful function of python language.

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